

FIVE NEW SPECIES OF *LYCHNOPHORA* FROM BAHIA,
BRASIL (VERNONIEAE: ASTERACEAE).

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The name *Lychnophora*, meaning candle-bearer, is thoroughly appropriate for the many often large candelabra-form species of the Brazilian genus to which it is applied. The distinctive group is inevitably of interest, and has been subjected to a number of studies in the past, especially by Schultz-Bipontinus (1863), Baker (1873) and Coile and Jones (1981). Recent efforts by the author, however, have shown that there are yet major problems in delimitation at both the genus and species levels in *Lychnophora*. The opportunity is taken here to make some observations on these points and to describe five new species from Bahia having comparatively smaller habits of the type sometimes placed in the segregate genus *Haplostephium*.

Past identification efforts by the author have resulted in the descriptions of *L. santosii* (Robinson, 1980a) and *L. souzae* (Robinson, 1980b), and the neotypification and transfer from the genus of *L. candelabrum* (Robinson, 1981). It is of interest that all of these species, as treated by the author, find themselves in some way in conflict with the generic delimitation of *Lychnophora* given by Coile and Jones (1981) where the first two are excluded and where a form approaching the third is included. The *L. santosii* has, in fact, caused doubts in the author's own mind because of the non-coriaceous multi-squamulate outer pappus series. Still, similarity to other species of the *Lychnophora blanchetii* group in Bahia, and the inner pappus segments are flattened and somewhat twisted. Retention in the genus seems best at this time. The species is certainly not a *Vernonia* as indicated by the transfer and later homonym provided by Jones and Coile (1981).

In the case of *L. souzae*, a position in *Piptolepis* was suggested by Coile and Jones (1981). This was the same placement suggested by the latter authors for *L. albertinioides* Gardn. Since Coile and Jones did not treat the two more common species of *Haplostephium* to which *L. souzae* is related, it is not possible to know whether they also would compare those species with *Piptolepis*. In any case, such placement is not accepted here, since *Piptolepis* is characterized by larger single heads on the ends of branches rather than having clusters of heads. Since *Haplostephium* is distinguished from *Lychnophora* only by the supposed lack of an outer pappus, and since

that character varies in a number of species, the genus *Haplostephium* is considered as a synonym of *Lychnophora*. This view includes the three species, including *L. souzae*, of the typical group from Minas Gerais, having the recurved lateral margins of the leaf blades extending to the base, and the comparatively unrelated species from Bahia placed in the genus by Mattfeld (1923). Although *L. albertinioides* is not a *Haplostephium*, it has clustered heads and is not a *Piptolepis*, and its retention in *Lychnophora* is recommended at this time.

In view of these exclusions from the Coile and Jones (1981) concept of the genus, the inclusion of *Lychnophoropsis*, and by implication, the related *Episcothamnus*, is inexplicable. These two genera, with larger heads in elongate inflorescences, are not included here in *Lychnophora*. *Lychnophoropsis* has 10-15 flowers in the head and has bifurcated achenes. The central presumably sterile achene being smaller with setulae densely covering the sides, and having filiform rather than flat pappus bristles. *Episcothamnus* has 20-25 flowers in each head, and has uniform achenes.

One feature of the Coile and Jones (1981) treatment that seems correct is the recognition of extensive hybridization in the genus. Although specific examples cited are not all accepted, there is no doubt that hybridization is a major factor in the genus.

The present study brings into use some leaf characters that do not seem to have been sufficiently emphasized in the past. The leaf tips are never acute as in *Lychnophoropsis* and *Episcothamnus*, but are sometimes apiculate or spinescent. This feature seems consistent in its various forms in most species, and is a factor in the distinction of some of the species described below. The leaf base is even more useful, with the typical element and majority of the species having essentially sessile leaves with recurved margins reaching to the base. To some extent the margins may actually be auriculate at the base, and a slight petiole might be present, hidden in the tomentum. In contrast, a number of species in Bahia have the recurved margins not reaching the base, and a short petiole can be seen forming a raised pad against the stem. This leaf base is similar in aspect to the condition seen in the Conifer genus *Abies*. The characters involved, especially the latter, have the advantage of being evident in most type photographs.

At the species level, the present study has been concerned primarily with the extensive material recently collected from Bahia. Careful examination of many characters, including those cited above, has resulted in the following corrections and establishment of various concepts.

Lychnophora bahiensis Mattfeld of Bahia was placed in the synonymy of *L. staavioides* Mart. of Minas Gerais by Coile and Jones (1981), and credited with being a possible hybrid between

that and *L. uniflora* Sch.Bip. Actually, *L. bahiensis* is not regarded here as a particularly close relative of either of the two species. *Lychnophora staavioides* is a more robust species with broader much thickened leaves having a tuft of tomentum at the apex when young. The midrib on the upper surface is also much more prominent than in *L. bahiensis*, often forming a strong ridge or near the base even showing a double fold. In contrast, *L. uniflora* seems to be a species closely related to *L. phyllicifolia*, without close relationship to either *L. staavioides* or *L. bahiensis*. Three specimens seen of *L. bahiensis*, Harley 15864, King & Bishop 8606 and 8764, all show a basal stock of long leaves giving rise to one or two subapically innovating lateral branches at a time. The leaves have rougher surfaces and blunter scarcely pointed tips than those of *L. uniflora*, and the pubescence of the stems and lower leaf surfaces is more densely tomentose and not straggly. A *L. bahiensis* type habit was mentioned by Coile and Jones in their discussion of *L. uniflora*, but their observation was undoubtedly based on the Harley specimen of *L. bahiensis* that they included in their list of specimens.

Lychnophora blanchetii Sch.Bip. has not been identified with any recent collection in the present study, but the type photograph shows a pad-like petiolar base and narrow leaves as in a number of species described from Bahia in the present study. The type photograph indicates an apiculate leaf tip, and the original description indicates indurated outer squamellae in the pappus unlike any of the likely relatives. The monograph by Coile and Jones (1981a) placed the species in the synonymy of *L. phyllicifolia*, but the latter is totally different with more shaggy pubescence on the stems and leaf undersurfaces, a smoother partially pilose upper surface of the leaf, a longer spinose leaf tip, and a broadened essentially sessile leaf base lacking a pad-like petiole base. The two species are not considered closely related in the present study. *Lychnophora phyllicifolia* seems related to *L. jeffreyi* described below from Bahia, but otherwise relates mostly to species centering their distribution in Minas Gerais. In contrast, *L. blanchetii* has the pad-like petiolar base like those of *Haplostephium triflorum* and other members of a species group concentrated in Bahia. The failure to match *L. blanchetii* in recent collections indicates that exploration in Bahia is still inadequate.

LYCHNOPHORA TRIFLORA (Mattfeld) H. Robinson, comb. nov.

Haplostephium triflorum Mattfeld, Notizbl. Bot. Gart. Berlin 8: 428. 1923. According to the original description (Mattfeld, 1923) and type photograph, the Bahian species is closely related to *L. blanchetii*, having a similar petiole base and a somewhat apiculate leaf tip. The leaves also have their revolute margins becoming contiguous underneath distally in both

species. The two species have been previously been considered synonyms by the present author, but the Mattfeld species differs in the less indurate often reddish inner pappus and the essential lack of an outer pappus. The leaves also seem generally narrower and more arcuate. The type photograph of *L. blanchetii* also seems to show more lanceolate involucre bracts. Because of these distinctions, the Mattfeld species requires the above new combination.

Although all the species of *Haplostephium* are included here in *Lychnophora*, they are not considered here as a single phyletic unit. The present species differs from the three species of the typical element in Minas Gerais by the 3-flowered heads and by the pad-like petiolar bases on the leaves. As already indicated, the present species relates instead to the group in Bahia that includes *L. blanchetii* and four of those described below.

The only recent specimen seen that closely approaches the original description and type photograph of *L. triflora* in its structure, is *King & Bishop 8675* from the type locality, Pico das Almas. This differs by the lack of an apiculate tip on the leaves. The leaves are, nevertheless, more curved, more narrowed distally, and the leaves of the inflorescence are broader in the middle than any of those in specimens of the florally similar *L. bishoppi* described below. The specimen is considered a variant of the higher elevation *L. triflora* rather than an intergrade with the lower elevation *L. bishoppi*.

The following five new species are all based on material that has at one time or another been labelled as *L. blanchetii*. The present concept represents a refinement of concept since the distribution of some of cited collections

LYCHNOPHORA BISHOPII H. Robinson, sp. nov.

Plantae fruticosae ad 1 m altae multo ascendentiter ramosae. Caules teretes dense hispidule albo-tomentosi. Folia dense spiraliter inserta plerumque recta late patentia et deinde leniter curvata, petiolis brevibus podiformis; laminae lineares plerumque 8-15 mm longae et ca. 1 mm latae margine integrae anguste uniformiter recurvatae subtus non contiguae apice anguste rotundatae supra glabrae subtus dense appressae albe stellatolepidotae. Inflorescentiae in ramis terminales. Capitula in axillis terminalibus dense congesta unusquisque anguste campanulata 7-8 mm alta et 3-4 mm lata; squamae involucri ca. 25 ca. 5-seriatae ovatae vel oblongo-ellipticae 2-6 mm longae et 1.0-1.5 mm latae apice anguste obtusae extus glabrae apice ad medio longe sordido-maculatae. Flores 3 vel 5 in capitulo; corollae superne pallide ca. 6.5 mm longae extus superne dense glandulopunctatae, tubis cylindraceutis 2.5-3.0 mm longis, faucibus brevibus ca. 0.5 mm longis, lobis lanceolatis ca. 3.5 mm longis et 0.6 mm latis; thecae antherarum ca. 2 mm longae; appendices antherarum ca. 0.7 mm longae et 0.23 mm latae; styli in partibus

hispidulis superioribus ca. 1.5 mm longi; rami stylorum ca. 1 mm longi. Achaenia 1.8-2.0 mm longa apice et fere ad basem pauce minute setulifera subglabra, cellulis numerosis idioblastiformibus in seriebus intermittentibus costalibus dispositis; setae pappi saepe lavandulae ca. 16-20 planae ca. 5 mm longae fragiles base contortae superne leniter tortae, seriebus exterioribus minutis triangularibus raro ad 0.5 mm longis. Grana pollinis in diametro ca. 37 μ m (*Lychnophora*-Type).

TYPE: BRASIL: Bahia: By Rio Cumbuca ca. 3 km. S. of Mucugê, near site of small dam on road to Cascavel. Riverside, damp sandy soil, sandstone rocks and partly burnt-over vegetation. Alt. ca. 850 m. Approx. 41° 21' W, 13° 01' S. Shrub to ca. 75 cm. Leaves imbricate. Flowers purple. 4 Feb. 1974. R. M. Harley, S. A. Renvoize, C. M. Erskine, C. A. Brighton & R. Pinheiro 15924 (Holotype, CEPEC; isotypes, US, K). PARATYPES: BRASIL: Bahia: By small river, 3 km along road S. of Mucugê. Elev. 2600 feet. Shrub 1 m tall, flowers lavender. Jan. 31, 1981. R. M. King & L. E. Bishop 8719 (US); Uncommon shrub, 3/4 m tall, flowers lavender. Jan. 31, 1981. R. M. King & L. E. Bishop 8721 (US); Município de Mucugê. A 3 km ao S de Mucugê, na estrada que vai para Jussiape. 1000 m de altura. Campo Rupestre. Arbusto, 1 m de altura. Corola lilas. 22 Dez. 1979. S. A. Mori & F. P. Benton 13160 (US); 2-4 km approximately SW of Mucugê on the road to Cascavel, open scrub on white sand with damp areas and extensive sedge meadow. Partly burnt over. Alt. ca. 950 m. Approx. 41° 24' W, 13° 01' S. Bushy shrub to 2 m. Leaves spreading, glossy mid-green above, grey beneath. Phyllaries grey green, inner with purple margin near apex. Corolla purple, turning paler with age. Stigma purple. 17.2.77. R. M. Harley, S. J. Mayo, R. M. Storr, T. S. Santos & R. S. Pinheiro 18827 (US); Serra do Sincorá, 3 km SW of Mucugê on the Cascavel road. Riverside vegetation on alluvial sands & nearby marsh. Alt. ca. 900 m. 41° 24' W, 13° 01' S. Bushy subshrub to 1 m with bare stems beneath. Leaves pale green above, whitish beneath. Phyllaries green, tinged pink. Florets lilac. 27 March 1980. R. M. Harley, G. L. Bromley, A. M. De Carvalho & G. Martinelli 21058 (US).

Lychnophora bishopii is distinct among the Bahian species with pad-like petioles by the narrow rather straight leaves with glabrous upper surfaces. The species seems close to *L. triflora* of the Pico das Almas, but has a remarkably consistent narrowness of the leaves with the white lepidote lower surface usually visible nearly to the narrowly rounded tip. This distinction is most obvious in the leaves of the inflorescence. The pappus bristles of *L. triflora* are also more tapered from near the middle, and its corollas seem to be truly rosaceous instead of rather pale as in the material seen of *L. bishopii*. All material of the new species is from the Mucugê area. The type and King & Bishop 8719 have 5-flowered heads while the other collections have heads with 3 flowers. The idioblast type

cells of the achene wall are comparatively simple, but have sufficient color to form rather obvious rows. The variably developed outer pappus of the species helps to further distract from the idea of a separate genus *Haplostephium*.

Some of the material of the species came labelled as *Piptolepis ericoides* (Less.) Sch.Bip. which it greatly resembles in habit. In fact, the members of the present group of *Lychnophora* in Bahia tend to parallel the habits of various species of the genus *Piptolepis* of Minas Gerais. However, the species of *Piptolepis* have larger heads with 9-25 flowers that are almost always solitary on the tips of branches. Also, the corollas have more elongate throats than those seen in *Lychnophora*, and have longer narrower basal tubes than those in the present group. The achene seen in *Piptolepis leptospermoides* (DC.) Sch. Bip. shows a distinctive type of triangular idioblastiform cell unlike those in *Lychnophora*. The cell is buried in the achene wall with the narrow end pointed outward, and the sloping lateral surfaces are covered by specialized sheathing cells on all sides. The outer pappus consists of setiform squamellae, unlike any of the species of *Lychnophora*.

The new species is named for Luther Earl Bishop, collector of two of the paratypes.

LYCHNOPHORA HARLEYI H. Robinson, sp. nov.

Plantae fruticosae ad 1.5 m altae multo ascendenter ramosae. Caules teretes albe subhispidolepidoti. Folia dense spiraleriter inserta erecto-patentia recta deinde non late patentia, petiolis brevibus podiformibus; laminae ellipticae plerumque 7-11 mm longae et 2-3 mm latae margine integrae anguste uniformiter recurvatae subtus late apertae apice breviter acutae supra laeves glabrae subtus dense appresse albe stellato-lepidotae. Inflorescentiae in ramis terminales paucicapitatae. Capitula in axillis terminalibus dense congesta unusquisque anguste campanulata 7-8 mm alta et ca. 3 mm lata: squamae involucri ca. 20 ca. 4-seriatae ovatae vel oblongo-ellipticae 2-6 mm longae et 0.8-1.4 mm latae apice anguste obtusae vel breviter acutae extus glabrae apice ad medio interdum sordidomaculatae. Flores ca. 4 in capitulo; corollae purpureae 7.0-7.5 mm longae extus superne sparse vel in partibus dense glandulopunctatae; tubis cylindraceutis 2.5-3.0 mm longis, faucibus 0.5-0.7 mm longis, lobis lineari-lanceolatis ca. 4.5 mm longis et 0.7 mm latis; thecae antherarum ca. 2 mm longae; appendices antherarum ca. 0.7 mm longae et 0.3 mm latae; styli in partibus hispidulis superioribus ca. 0.5 mm longi; rami styliorum ca. 1 mm longi. Achaenia 1.8-2.2 mm longa glabra, cellulis idioblastiformibus paucis inconspicuis; setae pappi pallidae ca. 12 anguste subfiliformes ca. 4 mm longae perfacile deciduae base contortae superne leniter tortae, seriebus exterioribus minute squamelliformibus induratis subquadratis truncatis ca. 0.1 mm longis. Grana pollinis in diametro 45-50 μ m (laxly areolate

Lychnophora--Type).

TYPE: BRASIL: Bahia: Serras dos Lençóis. About 7-10 km along the main Seabra-Itaberaba road, W. of the Lençóis turning, by the Rio Mucugézinho. Extensive sandstone outcrops and small trees, and some damp ground. Alt. ca. 800 m. 41° 26' W, 12° 28' S. This plant growing on sandy river side. Shrub to 1.5 m. Leaves coriaceous, glossy yellow-green above, white beneath. Corolla purple. 27 May 1980. R. M. Harley, G. L. Bromley, A. M. Carvalho, J. M. Soares Nunes, J. L. Hage & E. B. Dos Santos 22716 (Holotype, UB; isotypes, US, K).

Lychnophora harleyi is most distinctive among the related group with pad-like petioles by its rather thin elliptical ascending leaves that do not spread with age. The achenes also seem to have fewer inner bristles than *L. bishopii*, *L. morii* or *L. regis*, and the bristles are narrower than those of *L. blanchetii*, *L. regis* or *L. triflora*.

The species is named for R. M. Harley of Kew, specialist in the Labiatae, and collector of this and many other Bahian plants.

LYCHNOPHORA REGIS H. Robinson, sp. nov.

Plantae fruticosae 1-2 m altae multo patentiter ramosae. Caules teretes dense albe hirtello-tomentosi. Folia dense spiraliter inserta late patentia vel retroflexa rigida leniter aut distincte antrorse arcuata, petiolis brevibus sed podiformibus; laminae ovato-oblongae plerumque 4-7 mm longae et 2.0-2.5 mm latae margine integrae anguste uniformiter recurvatae subtus non contiguae apice rotundatae vel breviter obtusae supra glabrae irregulariter rugulosae subtus dense appresse albotomentosae. Inflorescentiae in ramis terminales. Capitula numerosa in axillis terminalibus dense congesta unusquisque anguste campanulata 7-9 mm alta et 3-4 mm lata; squamae involucri ca. 40 et ca. 5-seriatae oblongo-ellipticae 2-7 mm longae et 1.0-1.5 mm latae apice anguste rotundatae extus distaliter sordido-maculatae saepe puberulae. Flores 3-4 in capitulo; corollae azureae vel albae ca. 6-7 mm longae extus superne dense glandulo-punctatae, tubis cylindraceis superne infundibularibus 3-4 mm longis, faucibus brevibus ca. 0.6 mm longis, lobis lineari-lanceolatis ca. 2.5 mm longis et 0.5-0.6 mm latis; thecae antherarum ca. 2 mm longae; appendices antherarum ca. 0.6 mm longae et 0.3 mm latae; styli in partibus hispidulis superioribus ca. 1.2 mm longi; rami styliorum ca. 1 mm longi. Achaenia ca. 3 mm longa glabra, cellulis idioblastiformibus numerosis in partibus intercostalibus achaeniorum irregulariter dispositis; setae pappi pallidae ca. 14-20 taeniformes ca. 5 mm longae facile deciduae base contortae superne non tortae subinduratae, seriebus exterioribus nullis. Grana pollinis in diametro ca. 45-50 μ m (*Lychnophora*-Type).

TYPE: BRASIL: Bahia: Município de Mucugê, a 3 km ao S de Mucugê. Na estrada que vai par Jussiape. Elev. ca. 1000 m. Shrub 1-2 m tall, flowers blue. July 26, 1979. R. M. King,

S. A. Mori, T. S. dos Santos & J. L. Hage 8151 (Holotype, CEPEC; isotype, US). PARATYPES: BRASIL: Bahia: Município de Mucugê. Estrada que liga Mucugê cam Andaraí a 11 km de primeiro. Elev. ca. 1150 m. Shrub 1 m tall, flowers purple. July 27, 1979. *R. M. King, S. A. Mori, T. S. dos Santos & J. L. Hage 8168* (US); Main valley N of Mucugê from 3-8 km N of town. Elev. 2600-3000 feet. Fairly common shrub to 2 m tall, flowers mostly past anthesis, the few corollas nearly white. Jan. 31, 1981. *R. M. King & L. E. Bishop 8736* (US); Km 26 a 30 da Ros Andaraí/Mucugê. Solo pedregoso. Alt. 1050 m. Planta de 50 cm de alt. Flores azuladas c/ invólucros verdes. 9.5.76. *T. S. Santos 3112* (US).

Lychnophora regis differs from others of the *L. blanchetii* group in both aspect and details. The spreading heaves and branches are the most obvious distinction, the leaves usually being reflexed on older parts. The pubescence on the under-surfaces of the leaves is compact as in *L. bishopii* and *L. harleyi*, but not as slick from the appressed stellate expansions of the hairs as in the latter species. The leaf is broader compared to its length than in most other species of the group. In the florets the pappus segments are broader than those of most related species, and are distinctive in having no twist. The style has the hispidulous upper part of the shaft longer than the branches as in most species of the group but unlike *L. harleyi*.

The species is named for R. M. King, the principal collector of three of the specimens.

LYCHNOPHORA MORII H. Robinson, sp. nov.

Plantae fruticosae 1.0-1.7 m altae ascendenter vel interdum patentiter multo ramosae. Caules teretes dense sordide hirtello-tomentosi. Folia dense spiraliter inserta plerumque late patentia deinde interdum reflexa rigide distincte antrorse arcuata; petiolis brevibus distincte podiformibus; laminae anguste ovatae plerumque 8-9 mm longae et inferne 3 mm latae margine integrae praesertim distaliter reflexae et subapice subtus contiguae infernelate apertae apice anguste obtusae vel breviter acutae non pungentes supra distincte pilosulae glabrescentes subtus dense pallide hirtello-tomentosae. Inflorescentiae in ramis terminales. Capitula numerosa in axillis terminalibus dense congesta unusquisque anguste campanulata 7-8 mm alta et ca. 3 mm lata; squamae involucri ca. 25 ca. 5-seriatae ovatae vel oblongo-ellipticae 2-6 mm longae et 1.0-1.5 mm latae apice breviter acutae extus superne puberulae apice ad medio anguste sordido-maculatae. Flores 1-3 in capitulo; corollae purpureae ca. 6 mm longae extus superne glandulo-punctatae, tubis plerumque cylindraceutis 2.0-2.5 mm longis, faucibus brevibus ca. 0.5 mm longis, lobis lineari-lanceolatis ca. 3 mm longis et 0.6 mm; thecae antherarum ca. 2 mm longae; appendices antherarum ca. 0.6 mm longae et 0.27 mm latae; styli in partibus hispidulis superioribus ca. 1.7 mm longi; rami stylorum ca. 1.4

mm longi. Achaenia ca. 2 mm ? longa immatura glabra, cellulis idioblastiformibus non visis; setae pappi purpureae ca. 16 planae ca. 5 mm longae base contortae superne leniter tortae apice lanceolatae; seriebus exterioribus nullis? Grana pollinis in diametro 45-55 μm (laxly areolate *Lychnophora*-Type).

TYPE: BRASIL: Bahia: Serras dos Lençois. Serra da Larginha, ca. 2 km N.E. of Caeté-Açu (Capão Grande). West facing ridge with sandstone outcrops and summit plateau. Open scrub, low woodland and marsh. Alt. 1000-1400 m. 41° 29' W, 12° 36' S. Erect shrub to 1.7 m. Leaves rigid, dark green above, whitish grey beneath. Corolla purple. Pappus in flower, red. 25 May 1980. R. M. Harley, G. L. Bromley, A. M. de Carvalho, J. M. Soares Nunes, J. L. Hage & E. B. dos Santos 22554 (Holotype, UB; isotype, US). PARATYPES: BRASIL: Bahia: Municipality of Palmeiras, Pai Inaço, BR 242 W of Lençois at km 232. Campo Rupestre. Shrub, 1.5 m tall. Flowers purple. Mostly in bud, only a few plants seen in full flower. Common. 12 June 1981. S. A. Mori & B. M. Boom 14372 (US); Serras dos Lençois. Serra da Larginha, ca. 2 km N.E. of Caeté-Açu (Capão Grande). West facing ridge with sandstone outcrops and summit plateau. Open scrub, low woodland and marsh. Alt. 1000-1400 m. 41° 29' W, 12° 36' S. Shrub to 1 m. Leaves rigid, dark green above, greyish-fawn beneath. Phyllaries in bud with whitish grey hairs. 25 May 1980. R. M. Harley, G. L. Bromley, A. M. de Carvalho, J. M. Soares Nunes, J. L. Hage & E. B. dos Santos 22563 (US).

Lychnophora morii has leaves with recurved leaf margins connivent distally as in *L. blanchetii* and *L. triflora*, but lacks the pungent apiculate tip found in those species. The reddish pappus without an evident outer series further differs from the description of *L. blanchetii*. The available material of *L. triflora* shows a more prominent petioliform base and has less rigidly spreading leaves with a more lepidote appressed pubescence on the under surface. Also, in *L. triflora*, only the leaves in the inflorescence are notably broadened in the middle while leaves of the vegetative parts are rather narrow.

The most distinctive feature of *L. morii* is the pubescence on the upper surfaces of the younger leaves and the more erect pubescence on the under surfaces of the leaves. The younger parts of the plants are rather obviously whitish grey because of the hairs on the upper surfaces. The hairs on the under surface contrast strongly with the appressed form seen in even the non-lepidote members of the related group.

The species is named for Scott Mori of the New York Botanical Garden, collector of one of the paratypes and numerous other Bahian plants.

LYCHNOPHORA JEFFREYI H. Robinson, sp. nov.

Plantae fruticosae ca. 1.25 m altae multo patentiter ramosae. Caules teretes dense albe hirtello-tomentosi. Folia

dense spiraliter inserta erecto-patentia antrorse arcuata, petiolis obscuris non podiformibus; laminae ovato-lanceolatae plerumque 4-5 mm longae et inferne 1.5-2.0 mm latae base rotundatae subauriculatae margine integrae late recurvatae distaliter subtus contiguae apice pungentes vel breviter aristatae supra leniter rugulosae minute areolatae subtus dense appresse albotomentosae; folia in inflorescentiis distincte latiora ad 7 mm longa et 2.5 mm lata. Inflorescentiae in ramis terminales. Capitula numerosa in axillis terminalibus dense congesta unguisque anguste campanulata ca. 8 mm longa et 2 mm lata; squamae involucri ca. 15 et ca. 4-seriatae oblongo-ellipticae 1.5-5.0 mm longae et 0.5-1.0 mm latae apice apiculatae pungentes extus distaliter lepidotae atratae. Flores 3-5 in capitulo; corollae rosaceae ca. 7 mm longae superne multo glandulo-punctatae, tubis cylindraceutis ca. 3.5 mm longis, faucibus brevibus ca. 0.5 mm longis, lobis lineari-lanceolatis ca. 3 mm longis et base ca. 0.6 mm latis; thecae antherarum ca. 2 mm longae; appendices antherarum ca. 0.7 mm longae et 0.27 mm latae; styli in partibus hispidulis superioribus ca. 1.5 mm longi; rami stylorum ca. 1 mm longi. Achaenia ca. 2 mm longa glabra, cellulis idioblastiformibus in seriebus intermittentibus intercostalibus dispositis; setae pappi pallidae ca. 12-14 planae ca. 4.5 mm longae facile deciduae base contortae superne leniter tortae, coronis pappi exterioribus ca. 0.5 mm longis in marginem minute irregulariter denticulatis. Grana pollinis in diametro ca. 40 μ m (*Lychnophora*-Type).

TYPE: BRASIL: Bahia: Serra do Sincorá. W of Barra da Estiva on the road to Jussiape. Low grassland with scattered woodland & small streams on white quartzite soils, with occasional sandstone ridges. Alt. 1000-1300 m. 41° 25' W, 13° 40' S. This plant growing on slopes of sandstone ridge. Bushy shrub to about 1.25 m. Leaves rather yellow green above, white beneath. Flowers pink. 23 March 1980. R. M. Harley, G. L. Bromley, A. M. de Carvalho & G. Martinelli 20802 (Holotype, CEPEC; isotype, US).

Lychnophora jeffreyi is the only one of the present series of new species not belonging to the *L. blanchetii* relationship, lacking the podiform petiolar base of that group. The only extent to which the petiole extends basally beyond the base of the leaf blade is the extent to which it is buried in the tomentum of the stem. Instead, *L. jeffreyi* seems to be a small-leaved relative of *L. phyllicifolia* and *L. uniflora* which have the same type of broad subauriculate leaf base and tapering spinose tip. The species are also alike in their reduced number of involucre bracts. The apiculate tips on the bracts, however, are rather distinctive. Also, the new species lacks the longer hairs on the stems, around the leaf bases and sometimes abaxially along the midvein of the leaf such as occurs in the related species. The pappus is particularly distinct, having narrower, less undurate, tapering inner segments, and

having an undivided coroniform outer pappus.

The species is named for Charles Jeffrey of Kew who has provided identifications for most of the Harley collections of Asteraceae from the recent trips to Bahia.

Literature Cited

- Baker, J. G. 1873. Compositae. I. Verniaceae. *In* Martius, *Flora brasiliensis* 6 (2): 1-180, pl. 1-50.
- Coile, N. C. and S. B. Jones 1981. *Lychnophora* (Compositae: Vernonieae), A genus endemic to the Brazilian Planalto. *Brittonia* 33: 528-542.
- Jones, S. B. and N. C. Coile 1981. A new combination in *Vernonia* (Compositae: Vernonieae). *Brittonia* 33: 543.
- Mattfeld, J. 1923. Compositae. *In* R. Pilger, *Plantae Lützelburgianae Brasiliensis I. Notizbl. Bot. Gart und Mus. Berlin-Dahlem* 8: 428-451.
- Robinson, H. 1980a. Notes on the Lychnophorine genera *Chresta* and *Eremanthus* (Vernonieae: Asteraceae). *Phytologia* 45: 89-100.
- _____. 1980b. New species of Vernonieae (Asteraceae. VI. *Lychnophora souzae*. *Phytologia* 46: 104-106.
- _____. 1981. *Episcothammus* and *Bishopalea*, two new genera of Vernonieae (Asteraceae) from Brasil, and the resurrection of *Sipolisia*. *Phytologia* 48: 209-217.
- Schultz-Bipontinus, C. H. 1863. *Lychnophora* Martius und einige benachbarte Gattungen. *Pollichia* 20/21: 321-439.



Lychnophora bishopii H. Robinson, Isotype, United States National Herbarium. Photos by Victor E. Krantz, Staff Photographer, National Museum of Natural History.



Lychnophora harleyi H. Robinson, Holotype, Herbário Universidad de Brasília.



ASTERACEAE of BAHIA BRAZIL

Lychmophora regis H. Robinson

No. 28573

Collected by J. B. Robinson & S. J. Hager

M. G. de Macajé, 2 km N of Macajé, N. P. Bahia, Brazil, 1000 meters

Flowers yellow, fruit green

28573-1-100

28573

NATIONAL HERBARIUM

Robert M. King, Scott A. Mori, T. S. Gentry, S. J. Hager

Lychmophora regis H. Robinson, *Phytolobos regis* Robinson, *Phytolobos regis* Robinson, *Phytolobos regis* Robinson

Lychmophora regis H. Robinson, Isotype, United States National Herbarium.



Lychnophora

Serra dos Leões.
 Serra da Laginha, ca. 2 km. N.E. of Caetés-
 Agu (Capo Grande). West facing ridge with
 sandstone outcrops and summit plateau. Open
 scrub, low woodland and marsh.
 Alt. 1000-1400 m. 41°29'W., 12°36'S. BK.

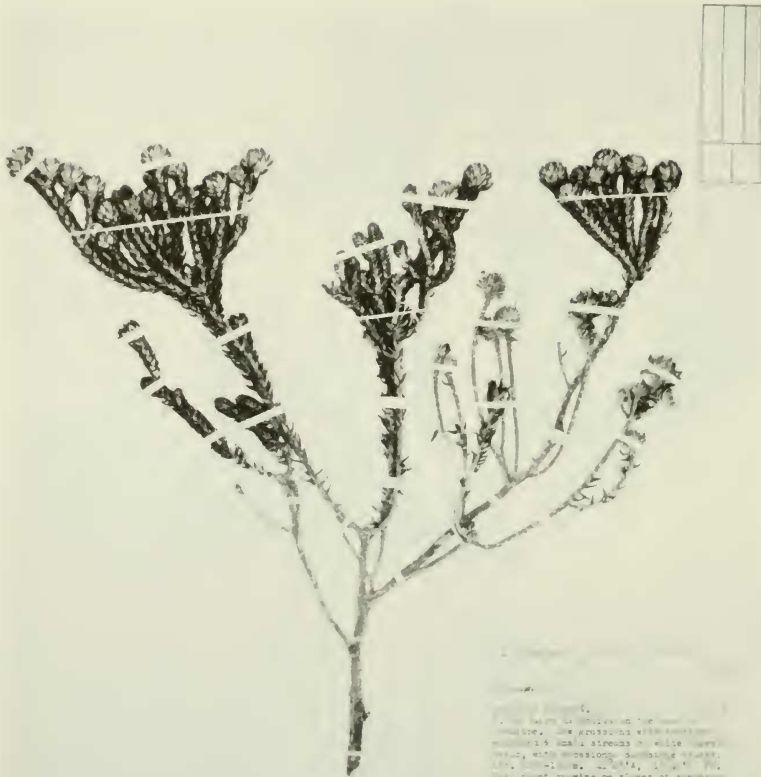
Erect shrub to 1.7 m. Leaves rigid, dark
 green above, whitish grey beneath. Corolla
 purple. Pappus in flower, red.

25 May 1980 R.M. Harley 22594

EX HERBARIO KEWENSE
 BRAZIL: ESTADO DA BAHIA

Lychnophora morii H. Robinson

Lychnophora morii H. Robinson, Holotype, Herbario
 Universidade de Brasília.



Lychnophora jeffreyi H. Robinson, Isotype, United States National Herbarium.

Shrub 1-2 m. tall. Leaves opposite, ovate, 1-2 cm. long, 1-2 cm. wide, green above, white beneath. Flowers white, 1-2 cm. diameter. Fruit globose, 1-2 mm. diameter.

Barley et al.

UNITED STATES
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Lychnophora jeffreyi H. Robinson, Isotype, United States National Herbarium.